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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,866	09/30/2003	Nobumasa Nishiyama	16869G-087200US	7653
20350	7590	11/29/2004	EXAMINER	
TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			FIGUEROA, NATALIA	
			ART UNIT	PAPER NUMBER
			2651	

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/676,866

Applicant(s)

NISHIYAMA ET AL.

Examiner

Natalia Figueroa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09/30/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on September 30, 2003 (09/30/2003) is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Contreras (USPN 6,014,581).

Regarding claim 1, Contreras discloses a magnetic recording disk drive comprising a magnetic head for reading information from a magnetic recording medium and writing information onto the magnetic recording medium (abstract and col. 1, lines 7-19); a first set of conductors communicating signals from said magnetic head during a read operation (or electrical interconnect with read and write paths, abstract and fig. 2); a second set of conductors communicating signals to said magnetic head during a write operation (or electrical interconnect with read and write paths, abstract and fig. 2); said first and second sets being spaced sufficiently closely so that a degree of interline crosstalk occurs when write signals are communicated on said second set of conductors, said degree of interline crosstalk differing between normal and abnormal conditions during write operations; and a circuit that distinguishes normal and

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abnormal conditions based on detecting said interline crosstalk and determining whether said degree of interline crosstalk meets a condition specifying an abnormal condition (col. 1, lines 36-52 and col. 3, line 44-col. 4, line 13 and col. 4, lines 48-56).

Regarding claim 2, a magnetic recording disk drive comprising a magnetic head for reading/writing information on a magnetic recording medium (abstract and col. 1, lines 7-19); a preamplifier having a write abnormality detection function (abstract, fig. 2 and col. 3, lines 56-58); and a transmission line for transmitting read/write signals between said preamplifier and said magnetic head (or electrical interconnect with read and write paths, abstract and fig. 2), wherein said transmission line from said preamplifier to said magnetic head includes a section in which a write line and a read line nm alongside of each other to produce interline crosstalk, said transmission line being formed such that it is branched within a read preamplifier (or electrical interconnect with read and write paths, abstract, fig. 2 and col. 4, lines 48-56); a detection circuit for receiving a signal from a line branched off within said read preamplifier to detect an interline crosstalk amplitude value (col. 4, lines 29-30); a signal source for outputting a threshold value used to determine whether an interline crosstalk amplitude in said detection circuit is one obtained under normal conditions or abnormal conditions; a comparator for receiving and comparing an actual interline crosstalk amplitude value and a threshold value, and when said actual interline crosstalk amplitude value is larger than said threshold value, outputting a signal indicating a write condition abnormality, said actual interline crosstalk amplitude value being an output of said detection circuit, said threshold value being an output of said signal source; and wherein said magnetic recording disk drive has a function to determine occurrence of said write

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condition abnormality upon receiving said signal indicating said write condition abnormality, said signal being output from said comparator (col. 3, line 44-col. 4, line 56).

Regarding claims 6-8, method claims 6-8 are drawn to the method of using the corresponding apparatus claimed in claims 1-2. Therefore method claims 6-8 correspond to apparatus claims 1-2 and are rejected for the same reasons of anticipation as used above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Contreras in view of Balakrishnan et al (USPN 6,424,499), hereinafter Balakrishnan ('499).

Regarding claim 3, Contreras is relied upon for the same reasons of rejection as stated above. Contreras fails to explicitly teach that said transmission line from said preamplifier to

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said magnetic head is set such that a distance between a center of said write line and a center of said read line in said section in which said write line and said read line run alongside of each other is 3 to 5.5 times a width of said write line.

However, Balakrishnan ('499) discloses such on (figs. 3A-3B and disclosure thereof). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to improve the apparatus as disclosed by Contreras with the above teachings from Balakrishnan ('499) to modify the width between the conductors hence reducing the cross-coupling between the conductors and preventing failure or data loss in the disk. Further more, the optimization of a range holds no patentable weight because it is not inventive to discover the optimum or workable ranges by routine experimentation (see *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)).

7. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Contreras in view of Balakrishnan et al (USPN 5,737,152), hereinafter Balakrishnan ('152).

Regarding claim 4, Contreras is relied upon for the same reasons of rejection as stated above. Contreras fails to explicitly teach that said transmission line from said preamplifier to said magnetic head is configured such that said section in which said write line and said read line run alongside of each other is constructed of one layer or two layers made up of an upper layer and a lower layer, said upper layer being a line said lower layer being a transmission line made up of a common potential conductor layer.

However, Balakrishnan ('152) discloses such on (figs. 3B and 8 and col. 7, lines 30-44). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to improve the apparatus as disclosed by Contreras with the above teachings

from Balakrishnan ('152) to include a transmission line with different levels of layering therefore providing a shield against cross-coupling hence preventing failure or data loss in the disk.

Regarding claim 5, claim 5 has limitations similar to those treated in the above rejections of claims 1-2, and are met by the references as discussed above. Claim 5 however also recites the following limitations that said magnetic recording disk drive has a function to when an inductance of a load connected to a write line is 43% to 69% of an inductance of a normal load, produce an interline crosstalk 1.35 to 2 times as large as an interline crosstalk under said normal load, both interline crosstalks being produced from said write line to a read line in said transmission line from said preamplifier to said magnetic head (figs. 5B-5C, 7B and col. 7, line 54-col. 8, line 5).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to improve the apparatus as disclosed by Contreras with the above teachings from Balakrishnan ('152) to modify the width between the conductors hence reducing the cross-coupling between the conductors and preventing failure or data loss in the disk. Further more, the optimization of a range holds no patentable weight because it is not inventive to discover the optimum or workable ranges by routine experimentation (see *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents are cited to further show the state of the art with respect to magnetic recording function.

a) Klaassen (USPN 5,608,591): Discloses an interconnect for magnetic disk drives.

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b) Balakrishnan et al (USPN 5,754,369): Discloses self-shielding integrated conductors.

c) Balakrishnan et al (USPN 5,812,344): Discloses an integrated conductor trace array.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalia Figueroa whose telephone number is (703) 305-1260.

The examiner can normally be reached on Monday - Thursday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh N. Tran can be reached on (703) 305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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PRIMARY EXAMINER